VISUALIZATION AND SELF-ORGANIZATION OF MULTIDIMENSIONAL DATA THROUGH EQUALIZED ORTHOGONAL MAPPING

Abstract of the Disclosure

The subject system provides reduced-dimension mapping of pattern data. Mapping is applied through conventional single-hidden-layer feed-forward neural network with non-linear neurons. According to one aspect of the present invention, the system functions to equalize and orthogonalize lower dimensional output signals by reducing the covariance matrix of the output signals to the form of a diagonal matrix or constant times the identity matrix. The present invention allows for visualization of large bodies of complex multidimensional data in a relatively "topologically correct" low-dimension approximation, to reduce randomness associated with other methods of similar purposes, and to keep the mapping computationally efficient at the same time.